

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor: Richard Christopher DECHARMS

Serial Number: 10/628,875

Filing Date: July 28, 2003

Title: METHODS FOR MEASUREMENT AND
ANALYSIS OF BRAIN ACTIVITY

Group Art Unit: 3737

Examiner: John Fernando Ramirez

CONFIRMATION NO: 3884

FILED ELECTRONICALLY ON: July 24 , 2006

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §1.97

Sir:

Applicant hereby submits an Information Disclosure Statement along with attached form PTO/SB/08. A copy of each listed publication is submitted, if required, pursuant to 37 CFR §§1.97-1.98, as indicated below.

Applicant respectfully requests that the listed information be considered by the Examiner and be made of record in the above-identified application. Applicant further requests that the Examiner initial and return the attached form PTO/SB/08 in accordance with MPEP §609.

Applicant reserves the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

This statement is not intended to represent that a search has been made or that the information cited in the statement is, or is considered to be, prior art or material to patentability as defined in §1.56.

- A. ☒ 37 CFR §1.97(b). This Information Disclosure Statement should be considered by the Office because:
- ☐ (1) It is being filed within 3 months of the filing date of a national application and is other than a continued prosecution application under §1.53(d);
-- OR --
 - ☐ (2) It is being filed within 3 months of entry of the national stage as set forth in §1.491 in an international application;
-- OR --
 - ☒ (3) It is being filed before the mailing of a first Office action on the merits;
-- OR --
 - ☐ (4) It is being filed before the mailing of a first Office action after the filing of a request for continued examination under §1.114.
- B. ☐ 37 CFR §1.97(c). Although this Information Disclosure Statement is being filed after the period specified in 37 CFR §1.97(b), above, it is filed before the mailing date of the earlier of (1) a final office action under §1.113, (2) a notice of allowance under §1.311, or (3) an action that otherwise closes prosecution on the merits, this Information Disclosure Statement should be considered because it is accompanied by one of:
- ☐ a statement as specified in §1.97(e) provided concurrently herewith;
-- OR --
 - ☐ a fee of \$180.00 as set forth in §1.17(p) authorized below, enclosed, or included with the payment of other papers filed together with this statement.
- C. ☐ 37 CFR §1.97(d). Although this Information Disclosure Statement is being filed after the mailing date of the earlier of (1) a final office action under §1.113 or (2) a notice of allowance under §1.311, it is being filed before payment of the issue fee and should be considered because it is accompanied by:
- i. a statement as specified in §1.97(e);
-- AND --
 - ii. a fee of \$180.00 as set forth in §1.17(p) is authorized below, enclosed, or included with the payment of other papers filed together with this Statement.
- D. ☐ 37 CFR §1.97(e). Statement.
- ☐ A statement is provided herewith to satisfy the requirement under 37 CFR §§1.97(c);
-- AND/OR --
 - ☐ A statement is provided herewith to satisfy the requirement under 37 CFR §§1.97(d);
-- AND/OR --
 - ☐ A copy of a dated communication from a foreign patent office clearly showing that the information disclosure statement is being submitted within 3 months of the filing date on the communication is provided in lieu of a statement under 37 C.F.R. § 1.97(e)(1) as provided for under MPEP 609.04(b) V.
- E. ☐ Statement Under 37 C.F.R. §1.704(d). Each item of information contained in the information disclosure statement was first cited in a communication from a foreign patent office in a counterpart application that was received by an individual designated in § 1.56(c) not more than thirty (30) days prior to the filing of this information disclosure statement. This statement is made pursuant to the

requirements of 37 C.F.R. §1.704(d) to avoid reduction of the period of adjustment of the patent term for Applicant(s) delay.

F. ☐ 37 CFR §1.98(a)(2). The content of the Information Disclosure Statement is as follows:

☐ Copies of each of the references listed on the attached Form PTO/SB/08 are enclosed herewith.

-- OR --

☒ Copies of U.S. Patent Documents (issued patents and patent publications) listed on the attached Form PTO/SB/08 are NOT enclosed.

-- AND/OR --

☒ Copies of Foreign Patent Documents and/or Non Patent Literature Documents listed on the attached Form PTO/SB/08 are enclosed in accordance with 37 CFR §1.98 (a)(2).

-- AND/OR --

☐ Copies of pending unpublished U.S. patent applications are enclosed in accordance with 37 CFR §1.98(a)(2)(iii).

G. ☐ 37 CFR §1.98(a)(3). The Information Disclosure Statement includes non-English patents and/or references.

☐ Pursuant to 37 CFR §1.98(a)(3)(i), a concise explanation of the relevance of each patent, publication or other information provided that is not in English is provided herewith.

☐ Pursuant to MPEP 609(B), an English language copy of a foreign search report is submitted herewith to satisfy the requirement for a concise explanation where non-English language information is cited in the search report.

-- OR --

☐ A concise explanation of the relevance of each patent, publication or other information provided that is not in English is as follows: _____

☐ Pursuant to 37 CFR §1.98(a)(3)(ii), a copy of a translation, or a portion thereof, of the non-English language reference(s) is provided herewith.

H. ☐ 37 CFR §1.98(d). Copies of patents, publications and pending U.S. patent applications, or other information specified in 37 C.F.R. § 1.98(a) are not provided herewith because:

☐ Pursuant to 37 CFR §1.98(d)(1) the information was previously submitted in an Information Disclosure Statement for another application under which this application claims priority for an earlier effective filing date under 35 U.S.C. 120.

Application in which the information was submitted: _____

Information Disclosure Statement(s) filed on: _____

AND

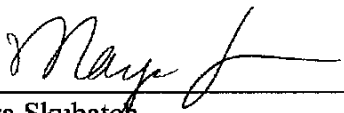
☐ The information disclosure statement submitted in the earlier application complied with paragraphs (a) through (c) of 37 CFR §1.98.

- I. ☒ *Fee Authorization.* The Commissioner is hereby authorized to charge the above-referenced fees of \$0.00 and charge any additional fees or credit any overpayment associated with this communication to Deposit Account No. 23-2415 (Docket No. 27969-705).

Respectfully submitted,

WILSON SONSINI GOODRICH & ROSATI

Dated: July 24, 2006

By: 
Maya Skubatch
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Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>				Complete if Known	
				Application Number	10/628,875
				Filing Date	July 28, 2003
				First Named Inventor	Richard Christopher DECHARMS
				Art Unit	3737
				Examiner Name	John Fernando Ramirez
Sheet	1	Of	4	Attorney Docket Number	27969-705

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-2002/0055675 A1	05/09/2002	Llinas, et al.	
		US-2002/0103428	08/01/2002	deCharms	
		US-2002/0103429	08/01/2002	deCharms	
		US-2005/0283053	12/22/2005	deCharms	
		US-5,184,074	02/01/1993	Arakawa, et al.	
		US-5,215,095	06/01/1993	Preston, Myra S.	
		US-5,267,570	12/07/1993	Rosenfeld, J. Peter	
		US-5,280,793	01/25/1994	Spano, Mark L.	
		US-5,450,855	09/01/1995	Rosenfeld	
		US-5,522,863	06/04/1996	Schneider, M. Brent	
		US-5,531,227	07/02/1996	Wolpaw, Jonathan	
		US-5,603,322	02/18/1997	Jesmanowicz, et al	
		US-5,638,826	06/17/1997	Brudny, Joseph	
		US-5,810,747	09/22/1998	Hoffberg, Steven M.	
		US-5,844,241	12/01/1998	Liu, et al	
		US-5,875,108	02/23/1999	Giuffre, Kenneth	
		US-5,887,074	03/23/1999	Lai et al.	
		US-5,899,867	05/01/1999	Collura	
		US-5,995,857	11/01/1999	Macvicar, Brian A.	
		US-6,042,548	03/28/2000	Hochman, Daryl	
		US-6,066,163	05/23/2000	John	
		US-6,161,031	12/12/2000	Rise, Mark	
		US-6,234,979	05/22/2001	Merzenich	
		US-6,275,723	08/14/2001	Ferris, et al.	

Examiner Signature	Date Considered
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This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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		US-6,289,232 B1	09/11/2001	Jakob, et al.	
		US-6,356,781	03/12/2002	Lee et al.	
		US-6,370,416	04/09/2002	Rosenfeld, Daniel	
		US-6,374,140	04/16/2002	Freer, Peter	
		US-6,377,833	04/01/2002	Albert	
		US-6,391,871	05/21/2002	Olney et al.	
		US-6,402,520	06/11/2002	Heid, Oliver	
		US-6,463,315	10/08/2002	Klingberg, et al.	
		US-6,477,399	11/05/2002	Biswal, et al.	
		US-6,517,812	02/11/2003	Breiter, et al.	
		US-6,539,246	03/25/2003	Heid, Oliver	
		US-6,539,263	03/25/2003	Schiff, Nicholas	
		US-6,597,937 B2	07/22/2003	Liu, et al.	
		US-6,687,525 B2	02/03/2004	Llinas, et al.	
		US-6,711,430	03/23/2004	Ferris, et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ - Number ² - Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		EP 0512577	11/11/1992	Somatics, Inc.		
		EP 1128188	08/29/2001	Marconi Medical Systems, Inc.		
		WO 97/10747	03/27/1997	Cleveland Medical Devices, Inc.		
		WO 97/26823	07/31/1997	University of Kansas		
		WO 99/63355	12/09/1999	The Government of USA		

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NON PATENT LITERATURE DOCUMENTS			
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		Arfanakis, Konstantinos, Cordes, Dietmar, Haughton, Victor M., Moritz, Chad H., Quigley, Michelle A., and Meyerand, Mary E., "Combining Independent Component Analysis and Correlation Analysis to Probe Interregional Connectivity in fMRI Task Activation Datasets", <i>Magnetic Resonance Imaging</i> , Vol. 18, No. 8., pp. 921-930 (2000).	
		Bock, Michael, Schad, Lothar R., Müller, Edgar, and Lorenz, Walter J., "Pulsewave Velocity Measurement Using a New Real-Time MR-Method", <i>Magnetic Resonance Imaging</i> , Vol. 13, No 1, pp. 21-29 (1995).	
		D'Esposito, M., Detre, J. A., Aguirre, G. K., Stallcup, M., Alsop, D. C., Tippet, L. J. and Farah, M. J., "A Functional MRI Study of Mental Image Generation", <i>Neuropsychologia</i> , Vol. 35, No. 5, pp. 725-730 (1997)	
		Downing, Paul, Liu, Jia, Kanwisher, Nancy, "Testing Cognitive Models of Visual Attention with fMRI and MEG", <i>Neuropsychologia</i> , Vol. 39, pp. 1329-1342 (2001).	
		FERNANDEZ, et al. "Language Mapping in Less Than 15 Minutes: Real-Time Functional MRI during Routine Clinical Investigation", 2001, <i>NeuroImage</i> , Vol 14, pp. 585-594	
		Fong, Grace, Knutson, Brian, Adams, Charles, Hommer, Daniel, "Event-Related fMRI Reveals Distinct Neural Correlates of Reward Anticipation versus Feedback", <i>NeuroImage</i> , Vol. 13, No. 6, Part 2 of 2 Parts (2001).	
		J.T. Voyvodic, "Real-Time fMRI Paradigm Control, Physiology, and Behavior Combine with Near Real-Time Statistical Analysis", 1999, <i>NeuroImage</i> , Vol.. 10, pp. 91-106	
		Kotchoubey et al., "A New Method For Self-Regulation of Slow Cortical Potentials in a Timed Paradigm", <i>Applied Psychophysiology and Biofeedback</i> , Vol. 22, No. 2, pp. 77-93 (1997).	
		Ngan, Shing-Chung, Auffermann, William F., Sarkar, Shantanu, and Hu, Xiaoping, "Activation Detection in Event-Related fMRI Data based on Spatio-Temporal Properties", <i>Magnetic Resonance Imaging</i> , Vol. 19, No. 9, pp. 1149-1158 (2001).	
		Pantel, J, Schröder, J, Schad, L.R., Friedlinger, M., Knopp, M.V., Schmitt, R., Geissler, M., Blüml, S., Essig, M. and Sauer, H., "Quantitative Magnetic Resonance Imaging and Neuropsychological Functions in Dementia of the Alzheimer type", <i>Psychological Medicine</i> , Vol.	

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Sheet	4	Of	4	Attorney Docket Number	27969-705

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
		27, pp. 221-229 (1997).	
		Paus, Tomás, "Imaging the Brain Before, During, and After Transcranial Magnetic Stimulation", <i>Neuropsychologia</i> , Vol. 37, pp. 219-224 (1999).	
		Schröder, Johannes, Essig, Marco, Baudendistel, Klaus, Jhan, Thomas, Gerdson, Ingo, Stockert, Andreas, Schad, Lothar R. and Knopp, Michael V., "Motor Dysfunction and Sensorimotor Cortex Activation Changes in Schizophrenia: A Study with Functional Magnetic Resonance Imaging", <i>NeuroImage</i> , Vol. 9, pp. 81-87 (1999).	
		Siniatchkin, Michael, Kropp, Peter and Gerber, Wolf-Dieter, "Neurofeedback The Significance of Reinforcement and the Search for an Appropriate Strategy for the Success of Self-regulation", <i>Applied Psychophysiology and Biofeedback</i> , Vol. 25, No. 3, pp. 167-175 (1998).	
		Thompson, L. and Thompson M., "Neurofeedback Combined with Training in Metacognitive Strategies: Effectiveness in Students with ADD", <i>Applied Psychophysiology and Biofeedback</i> , Vol. 23, No. 4, pp. 243-263 (1998).	
		TONI, et al. The Time Course of Changes during Motor Sequence Learning: A Whole-Brain fMRI Study. <i>Neuroimage</i> . 1998; Vol. 8: 50-61.	
		Wilding, Edward L., "Event-Related Functional Imaging and Episodic Memory", <i>Neuroscience & Biobehavioral Reviews</i> , Vol. 25, pp. 545-554 (2001).	
		Yoo, Seung-Schik, Guttmann, Charles R. G., Zhao, Lei and Panych, Lawrence P., "Real-Time Adaptive Functional MRI", <i>NeuroImage</i> , Vol. 10, pp. 596-606 (1999)	
		Zacks, Jeff, Rypma, Bart, Gabrieli, J.D.E., Tversky, Barbara, Glover, Gary H., "Imagined Transformations of Bodies: An fMRI Investigation", <i>Neuropsychologia</i> , Vol. 37, pp. 1029-1040 (1999).	

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